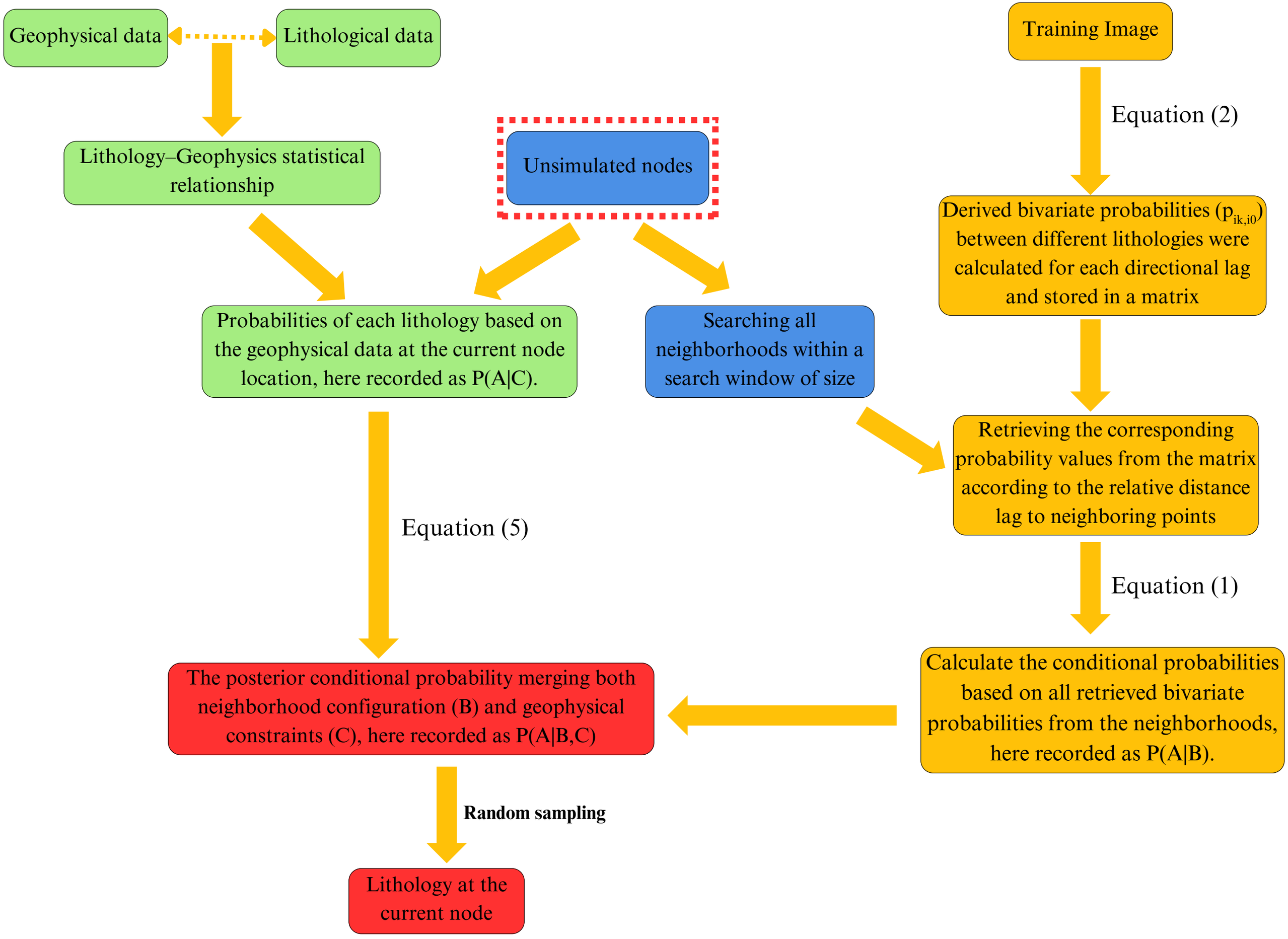
Geophysical data
Lithological data
Training Image
Equation (2)
Lithology–Geophysics statistical relationship
Unsimulated nodes
Derived bivariate probabilities ($p_{ik,i0}$) between different lithologies were calculated for each directional lag and stored in a matrix
Probabilities of each lithology based on the geophysical data at the current node location, here recorded as P(A|C).
Searching all neighborhoods within a search window of size
Retrieving the corresponding probability values from the matrix according to the relative distance lag to neighboring points
Equation (5)
Equation (1)
The posterior conditional probability merging both neighborhood configuration (B) and geophysical constraints (C), here recorded as P(A|B,C)
Calculate the conditional probabilities based on all retrieved bivariate probabilities from the neighborhoods, here recorded as P(A|B).
Random sampling
Lithology at the current node